Magnetocaloric Properties of $Fe_{75}Mo_8Cu_1B_{16}$ and $Fe_{81}Mo_8Cu_1B_{10}$ Metallic Glasses

M. Hasiak,[1] M. Miglierini,[2,3] J. Kaleta,[1] and M. Bujdos[4]

[1] *Wrocław University of Technology, 50 370 Wrocław, Poland*

[2] *Slovak University of Technology, 812 19 Bratislava, Slovakia*

[3] *RCATM, Palacky University, 771 46 Olomouc, Czech Republic*

[4] *Comenius University, 842 15 Bratislava, Slovakia*

Magnetocaloric materials, intensively studied for over 20 years, are very interesting because of possible refrigeration applications. In this paper we investigate the microstructure and magnetic properties of $Fe_{75}Mo_8Cu_1B_{16}$ and $Fe_{81}Mo_8Cu_1B_{10}$ metallic glasses in as quenched state and after annealing. The microstructure of the investigated alloys was examined by Mössbauer spectroscopy using surface sensitive technique (CEMS). The magnetic properties were recorded in a temperature range 50 – 400 K. The magnetocaloric effect was calculated from the Maxwell thermodynamic equation. The obtained results will be discussed both from the point of view of microstructure and magnetic properties.

This work was supported by the research projects VEGA 1/0286/12, SK-PL-0032-12, CZ.1.05/2.1.00/03.0058, and CZ.1.07/2.3.00/20.0155.